

CLAIMS

What is claimed is:

1. A ventilated sealing head for an inductive cap sealer, comprising:
a housing having openings at one side including an inlet;
a fan located to pass air into the housing through the inlet;
an induction coil producing an electromagnetic field when energized disposed in the housing so as to be cooled by the air passing through the inlet;
and
a field focusing cradle disposed in the housing to direct the electromagnetic field of the coil toward a sealing region at a side of the sealing head opposite the openings in the housing.
2. The sealing head of claim 1, wherein at least one opening in the housing is an outlet for expelling cooling air passed into the housing by the fan.
3. The sealing head of claim 2, wherein the housing includes three openings including a central inlet and two outlets.
4. The sealing head of claim 3, further including a vent plate disposed in the housing having a plurality of openings aligned with the openings of the housing.
5. The sealing head of claim 4, wherein the vent plate openings are grouped into a set of inlet openings and two sets of outlet openings aligned with the respective one inlet and two outlet openings in the housing.
6. The sealing head of claim 2, wherein cooling air entering the housing through the inlet passes through a bend of greater than ninety degrees before exiting through the outlet.
7. The sealing head of claim 6, wherein the bend is greater than 135 degrees.

8. The sealing head of claim 7, wherein the bend is essentially 180 degrees for at least a portion of the cooling air passing from the inlet to the outlet.

9. The sealing head of claim 1, wherein the field focusing cradle includes a plurality of ferrite elements spaced apart along at least a portion of the periphery of the coil allowing cooling air to flow therebetween.

10. The sealing head of claim 1, wherein the coil is bundled wire.

11. The sealing head of claim 1, wherein the housing has a flat side adjacent the sealing region.

12. The sealing head of claim 1, further including an air guide disposed between the fan and the sealing head for directing air from the fan into the inlet.

13. The sealing head of claim 11, wherein the air guide is a rectilinear frame defining an air passage through its center.

14. An apparatus for inductively sealing an inner seal over an opening in a container, comprising:

a power supply for producing alternating current;

an external sealing head having a housing containing an induction coil for producing an electromagnetic field when energized by the power supply and field focusing elements arranged to direct the electromagnetic field to a sealing region at one side of the sealing head; and

a fan arranged to pass cooling air through the housing past the coil without flowing into the sealing region.

15. The apparatus of claim 14, wherein the housing includes an inlet opening and at least one outlet openings at the side of the sealing head opposite the sealing region such that cooling air passed through the housing from the fan flows in an essentially U-shaped path.

16. The apparatus of claim 15, further including a vent plate mounted inside the housing between the coil and the inlet and outlet openings of the housing and aligned therewith.